AMENDMENTS TO THE CLAIMS

1.   (currently amended) A method for distinguishing a differentiated squamous cell lung cancer carcinoma from an undifferentiated lung cancer, carcinoma, which method comprises detecting p63 expression in cells from a lung ~~cancer~~ carcinoma, wherein p63 expression indicates that the lung ~~cancer~~ carcinoma is a ~~differentiated~~ squamous cell lung ~~cancer~~ carcinoma and the absence of p63 expression indicates that the lung ~~cancer~~ carcinoma is an undifferentiated lung ~~cancer~~ carcinoma.

2.   (original) The method according to claim 1 wherein detecting p63 expression comprises detecting expression of p63 protein.

3.   (original) The method according to claim 2 wherein detecting p63 protein expression comprises detecting the p63 protein with an immunoassay.

4.   (original) The method according to claim 3 wherein the immunoassay is an immunohistochemical assay.

5.   (currently amended) The method according to claim 1 wherein the differentiated lung carcinoma is selected from the group consisting of a poorly differentiated squamous cell carcinoma, a moderately differentiated squamous cell carcinoma, and a well differentiated squamous cell carcinoma, ~~an adenosquamous carcinoma, and an adenocarcinoma~~.

6.   (currently amended) The method according to claim 1 wherein the differentiated lung ~~cancer~~ carcinoma is a poorly differentiated squamous cell carcinoma.

7.   (currently amended) The method according to claim 1 wherein the undifferentiated lung ~~cancer~~ carcinoma is a small cell undifferentiated carcinoma.

8.   (currently amended) A method of treatment of lung ~~cancer~~ carcinoma in a patient, which method comprises administering a chemotherapeutic agent to a patient diagnosed with a

small cell undifferentiated ~~carcinoma~~ lung ~~cancer,~~ carcinoma, wherein the small cell undifferentiated carcinoma is distinguished from a differentiated squamous cell carcinoma by detecting an absence of p63 expression in cells from the lung carcinoma.

9.   (original) A method according to claim 8 wherein detecting p63 expression comprises detecting expression of p63 protein.

10.   (original) The method according to claim 9 wherein detecting p63 protein expression comprises detecting the p63 protein with an immunoassay.

11.   (original) The method according to claim 10 wherein the immunoassay is an immunohistochemical assay.

12.   (currently amended) A method of treatment of ~~cancer~~ carcinoma in a patient, which method comprises surgically resecting a differentiated squamous cell carcinoma from a lung of a patient diagnosed with differentiated squamous cell carcinoma lung cancer, wherein the differentiated squamous cell carcinoma is distinguished from a small cell undifferentiated lung carcinoma by detecting p63 expression in cells from the lung carcinoma.

13.   (original) A method according to claim 12 wherein detecting p63 expression comprises detecting expression of p63 protein.

14.   (original) The method according to claim 13 wherein detecting p63 protein expression comprises detecting the p63 protein with an immunoassay.

15.   (original) The method according to claim 12 wherein the immunoassay is an immunohistochemical assay.

16.   (currently amended) A method for distinguishing a carcinoma of epithelial cells with squamous cell differentiation or squamous differentiation potential from ~~a non-epithelial cell carcinoma~~ a carcinoma without squamous cell differentiation or squamous differentiation

potential, or a non-epithelial cell tumor, which method comprises detecting p63 expression in cells from a carcinoma, wherein p63 expression indicates that the carcinoma is a carcinoma ~~l~~ of epithelial cells with squamous cell potential and the absence of p63 expression indicates that the carcinoma is a ~~non-epithelial carcinoma or a~~ carcinoma without squamous differentiation, squamous differentiation potential, or is a non-epithelial tumor.

~~19.~~ 17. (currently amended) The method according to claim 16, wherein the epithelial cells with squamous cell potential are selected from the group consisting of squamous epithelia, transitional cells, and glandular epithelia.

~~17.~~ 18. (currently amended) The method according to claim ~~16~~ 17, wherein the epithelial cells are glandular epithelia, and wherein the carcinoma without squamous differentiation potential is a glandular carcinoma.

~~18.~~ 19. (currently amended) The method according to claim ~~17~~ 18, wherein the glandular carcinoma is a renal carcinoma.

20. (original) A method for distinguishing a thyroid papillary carcinoma from another thyroid neoplasm, nodule, or enlargement, which method comprises detecting p63 expression in cells from a thyroid neoplasm, nodule, or enlargement, wherein p63 expression indicates that the neoplasm, nodule, or enlargement is a papillary carcinoma and the absence of p63 expression indicates that the neoplasm, nodule, or enlargement is not a papillary carcinoma.

21. (original) The method according to claim 20, wherein the neoplasm that is not a papillary carcinoma is a follicular adenoma, a medullary carcinoma, an anaplastic carcinoma, or a Hurthle cell carcinoma.

22. (original) A method for distinguishing a Hashimoto's thyroiditis from another thyroid inflammatory condition, which method comprises detecting p63 expression in cells from a thyroid inflammatory condition, wherein p63 expression indicates that the pathology is Hashimoto's thyroiditis.

23.   (original) The method according to claim 22, wherein the inflammatory condition is not Hashimoto's thyroiditis.

24.   (original) The method according to claim 23, wherein the inflammatory condition is Grave's disease.